

AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include changes to Figures 5-7 to insert the legend --PRIOR ART--. The replacement sheets, which include Figures 5-7, replace the original sheets including Figures 5-7. Changes incorporated in this sheet are indicated in red on the attached annotated copy of the original sheet.

Attachments: Replacement Sheets

Annotated Copy of Original Sheets

REMARKS

Claims 1-4 are pending in this application. Claim 1 has been amended to incorporate claim 2, and claim 2 has been cancelled. No new subject matter is believed to have been added by this amendment. Therefore, claims 1, 3 and 4 remain in this application. Claims 3 and 4 were withdrawn from consideration by the Examiner in view of an earlier restriction requirement. In view of the Examiner's earlier restriction requirement, the Applicants retain the right to present claims 3 and 4 in a divisional application.

Drawing Objections

The drawings stand objected to because the Examiner contends that Figures 5-7 should be designated with a label such as – Prior Art --. The Applicants believe that new Figures 5-7 overcome the Examiner's objections. Amendments to Figures 5-7 are indicated in red in the attached annotated copies of Figures 5-7. Acceptance of the replacement drawings is respectfully requested.

Prior Art Rejections

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Applicants' admitted prior art (hereinafter "APA"). Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over APA in view of United States Patent No. 6,559,524 to Seko (hereinafter "the Seko patent"). In view of the above amendment and the following remarks, the Applicants respectfully request reconsideration of these rejections.

As defined by amended independent claim 1, the present invention is directed to a film carrier tape for mounting an electronic part comprising an insulating film, a wiring pattern formed on a surface of the insulating film, and a solder resist layer formed by moving a squeegee using a screen mask of a prescribed pattern that is formed in such a manner that connecting terminal portions of the wiring pattern should be exposed. An edge of the solder resist layer comprises an edge portion almost parallel to the moving direction of the squeegee, an edge portion almost right-angled to the moving direction of the squeegee and a corner portion that joins the almost parallel edge portion and the almost right-angled edge portion, and the corner portion is in a shape of a staircase wherein the edge portion almost parallel to the moving direction of the squeegee and the edge portion almost right-angled to the moving direction of the squeegee are alternately arranged.

The APA discloses a film carrier tape for mounting electronic parts including an insulating film, a wiring pattern (51) formed on the insulating film and a solder resist layer (50) formed by moving a squeegee using a screen mask. It is further described that the solder resist is applied to a prescribed area of the wiring pattern such that the connecting terminal portions of the wiring pattern are exposed. Furthermore, the edge (62) of the solder resist layer (50) in Fig. 5 is formed approximately in parallel or approximately at a right angle to the moving direction S of the squeegee.

However, the APA fails to teach or suggest that the edge of the solder resist layer includes a corner portion in a shape of a staircase that joins the almost parallel edge portion and the almost right-angled edge portion as required by amended independent claim 1.

Furthermore, the Seko patent fails to cure this deficiency. The Seko patent is directed to a COF-use tape carrier for a semiconductor device. The COF-use tape carrier includes a flexible insulating tape, a wiring pattern including inner leads and outer leads formed on the insulating tape, a solder resist covering the inner leads and one or more dummy leads formed in the proximity of an edge of an opening of the solder resist. The opening of the solder resist corresponds to a semiconductor chip-mounting region of the insulating tape, with portions of the inner leads to be electrically connected to a semiconductor chip being exposed from the opening of the solder resist. The dummy leads are not to be electrically connected to the semiconductor chip. Some spaces between adjacent two inner leads are wide and others are narrow, and the dummy lead is formed between adjacent two inner leads that are widely spaced from each other. The Examiner provides the Seko patent as a teaching of a solder resist with a corner formed by a right angled edge portion joined with a parallel edge portion and that the corner includes a staircase shape.

However, the Seko patent is silent with respect to a corner portion in the shape of a staircase joining a right angled edge portion and a parallel edge portion alternately as required by amended independent claim 1. Instead, with reference to FIG. 1 of the Seko patent and assuming the moving direction of a squeegee is towards the top of the page, the Seko patent only discloses a solder resist layer including a first parallel edge portion, a right-angled portion and a second parallel edge portion. Therefore, the Seko patent fails to teach or suggest a corner portion in the shape of a staircase that joins either the first parallel edge portion and a right-angled portion or the second parallel portion and the right-angled portion. In other words, the Seko patent fails to teach or suggest a corner portion in the shape of a

staircase wherein the edge portion almost parallel to the moving direction of the squeegee and the edge portion almost right-angled to the moving direction of the squeegee are alternately arranged as required by amended independent claim 1.

Furthermore, an object of the present invention is to provide a film carrier tape for mounting electronic parts having a low rate of occurrence of solder resist coating failure at the edge of the solder resist coating layer as described at page 4, lines 12-15 of Applicants' specification. This objective has been accomplished by adopting a film carrier tape for mounting electronic parts as defined in amended independent claim 1. As exemplified by Example 1 beginning on page 20, line 13 of the Applicants' specification, a film carrier tape for mounting electronic parts as defined in amended independent claim 1 can produce very low rates of defects or no defects caused by solder resist coating failure whereas a conventional film carrier tape for mounting electronic parts produces a high rate of defects due to solder resist coating failure. In other words, amended independent claim 1 does not involve routine optimization that has been held to be within the level of ordinary skill in the art, and possesses notable features as well as produces a new and unexpected result.

For the foregoing reasons, the Applicants believe that the subject matter of amended independent claim 1 is not anticipated by the APA or the Seko patent, nor is it rendered obvious by the APA in combination with the Seko patent. Reconsideration and withdrawal of the rejection of claim 1 are respectfully requested.

CONCLUSION

Based on the foregoing amendments and remarks, reconsideration of the rejections and allowance of independent claim 1 are respectfully requested.

Respectfully submitted,

THE WEBB LAW FIRM

By

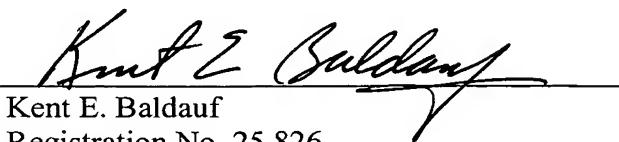
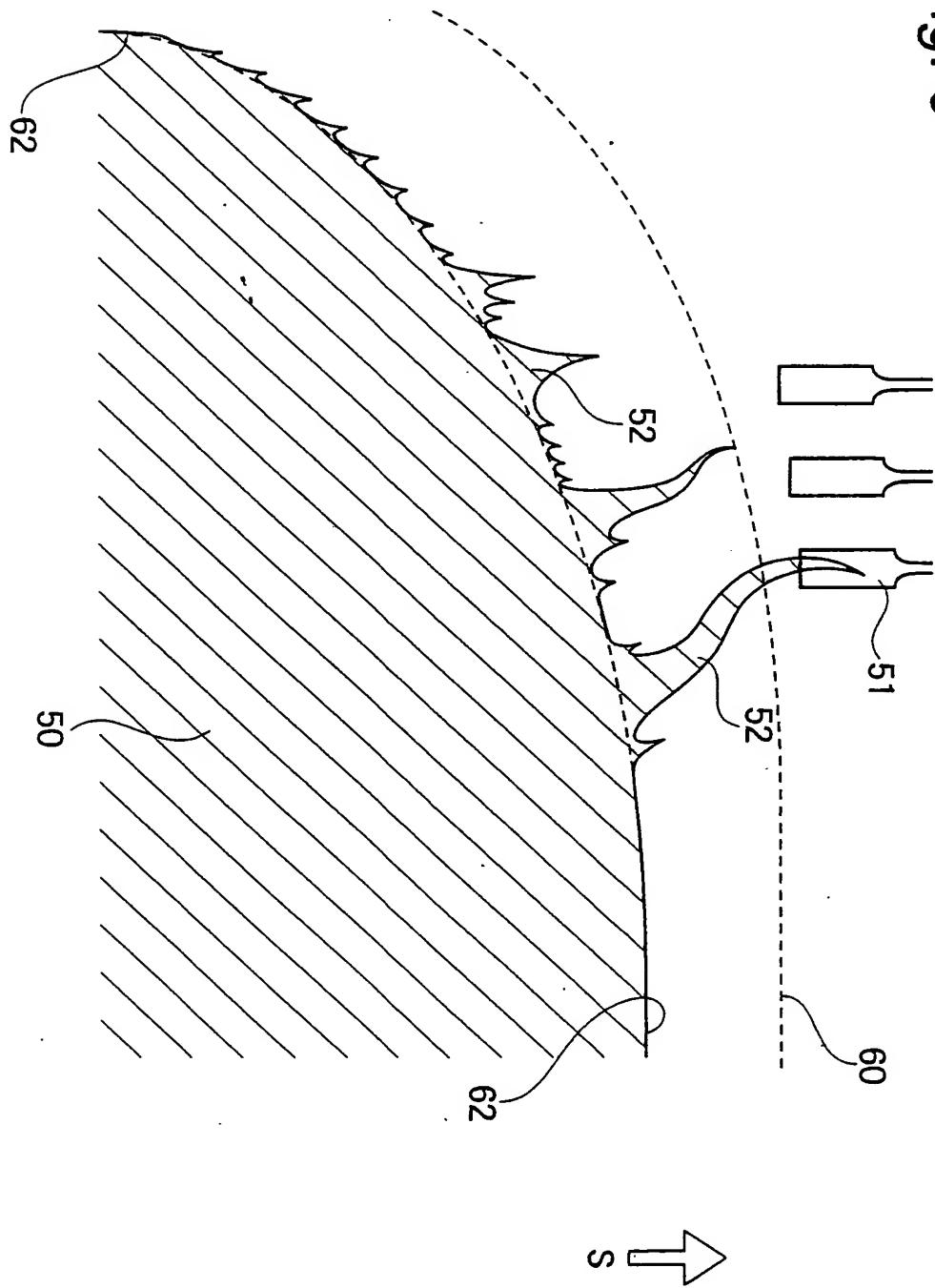

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Fig. 6



PRIOR ART

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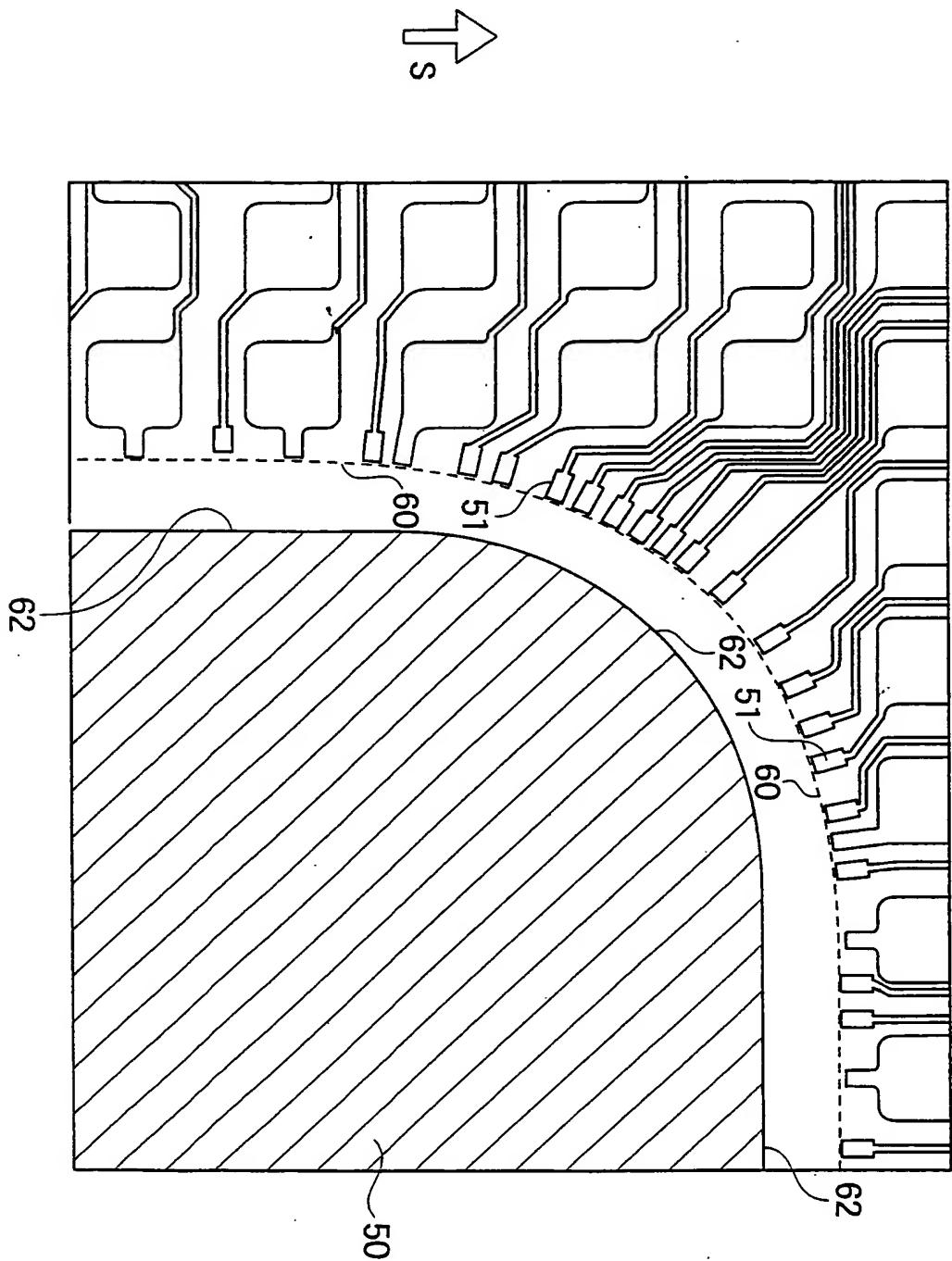


Fig. 5



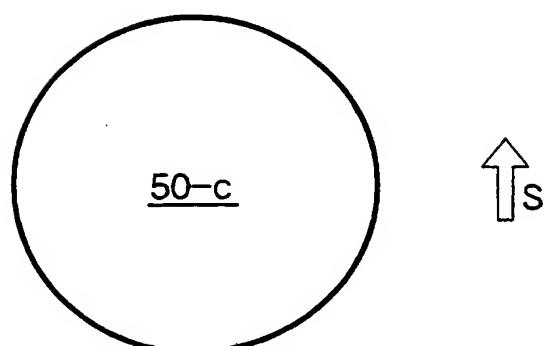
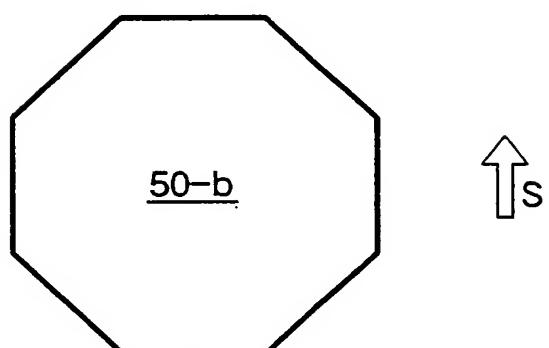
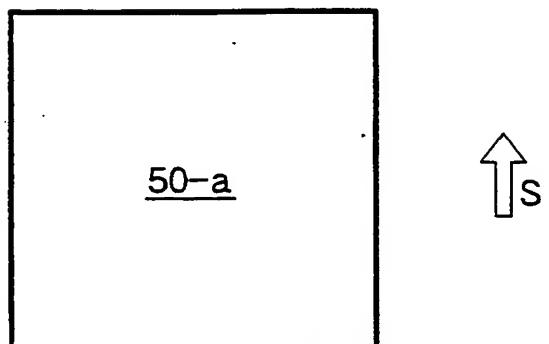
Akihiro Terada et al.

"Film Carrier Tape for Mounting Electronic Part and Screen Mask for Solder Resist Coating"

Attorney Docket No. 1217-031772

ANNOTATED SHEET

Fig. 7



PRIOR ART